OpenSees: Modelling II

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Main Abstractions in OpenSees

Holds the state of the model
at time t and $(t + dt)^i$

| ModelBuilder | Domain | Analysis |

Constructs the objects
in the model and adds
them to the domain.

Moves the model
from state at time t to
state at time t + dt

Recorder

Monitors user defined
parameters in the
model during the
analysis
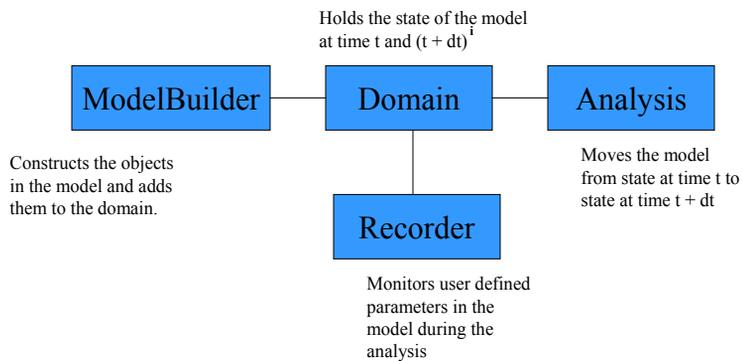
more element commands:

Element

remember element commands of the form

element $type ($args)

Truss
ZeroLength
ElasticBeamColumn
NonlinearBeamColumn
DispBeamColumn
BeamWithHinges
Quad (std, bbar, enhanced)
Brick (std, bbar)
Shell

element truss $tag $iNd $jNd $Area $matTag

element zeroLength $tag $iNd $jNd -mat $matTag1 $matTag2 ... -dir $dir1 $dir2 ...

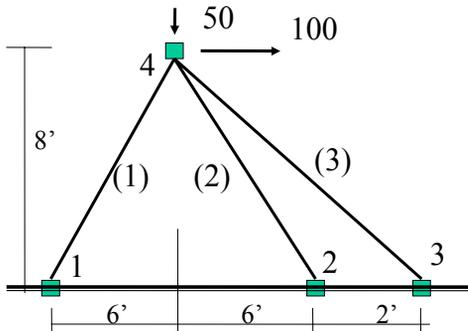element elasticBeamColumn $tag $iNd $jNd $A $E $Iz $transfTag

element stdQuad $tag $iNd $jNd $kNd $lNd $matTag

element stdBrick $tag $nd1 $nd2 $nd3 $nd4 $nd5 $nd6 $nd7 $nd8 $matTag

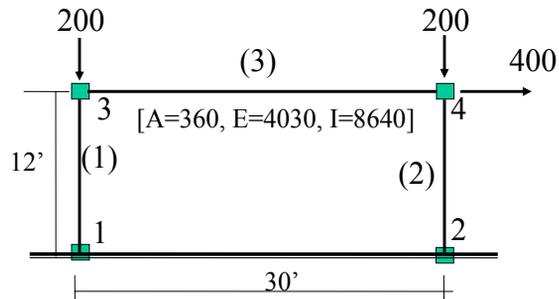element shell $tag $iNd $jNd $kNd $lNd $secTag

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Example 1: Simple Truss

	E	A
1	3000	10
2	3000	5
3	3000	5

Example 2: Portal Frame

200   200

(3)   400

3   [A=360, E=4030, I=8640]   4

12'   (1)   (2)

1   2

30'

Example 3: Simply Supported Beam

5'

20'   20'

200